

STATE OF NEW HAMPSHIRE

INTER-DEPARTMENT COMMUNICATION

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Bureau Administrator

Date June 8, 2010

Offices
Dept of Environmental Services
Water Division

SUBJECT 1) Possible matrix method for assigning
designated uses, and; 2) Other states
designated uses

TO Water Quality Standards Advisory
Committee - Designated Uses Working
Group

SITUATION

Paul Currier presented a matrix concept for assigning tiered designated uses to New Hampshire waters at the working group meeting on May 26, 2010 (Figure 1). The working group expressed interest in exploring the concept further, and requested DES to provide a description of how such a matrix might work in practice and a conceptual process for transition from the current classification system to the new one, as well as information on other states' designated uses.

Figure 1:

ONE IDEA FOR A MATRIX OF DESIGNATED USES AND SUBCLASSES (TIERS)							
AQUATIC LIFE	SWIMMING	BOATING	DRINKING WATER SUPPLY	FISH CONSUMPTION	SHELLFISH CONSUMPTION	WILDLIFE	GEOMORPHIC INTEGRITY
Natural	Frequent	Frequent	Source Water	Fishing possible	Shellfishing possible	Natural	Natural
Rural	Occasional	Occasional	Potential Source Water	Not Fish Habitat	Not Shellfish Habitat	Rural	Managed
Community	Rare	Rare	No Water Supply Potential			Community	
Urban						Urban	

NEW HAMPSHIRE'S PRESENT CLASSIFICATION SYSTEM

New Hampshire's classification system is contained in [RSA 485-A:8 to 11](#). RSA 485-A:8 and the Surface Water Quality Regulations [Env-Wq 1700](#) comprise the WQS. RSA 485-A:9 to 11 define a procedure for classification and reclassification in which DES recommends, and the legislature assigns, either Class A or Class B to waterbodies in the state. Current practice (as described in the [CALM](#)) assigns the same DUs to both classes [aquatic life; recreation; drinking water supply after adequate

treatment; fish and shellfish consumption, and; wildlife], although the legislative and rule language would imply that Class A is intended to be a “higher” or “more natural” class of waters, at least for aquatic life, recreation, and drinking water supply after adequate treatment. Attachment I is a map showing the existing Class A designations, and Attachment II is a table showing the differences in criteria between Classes A and B.

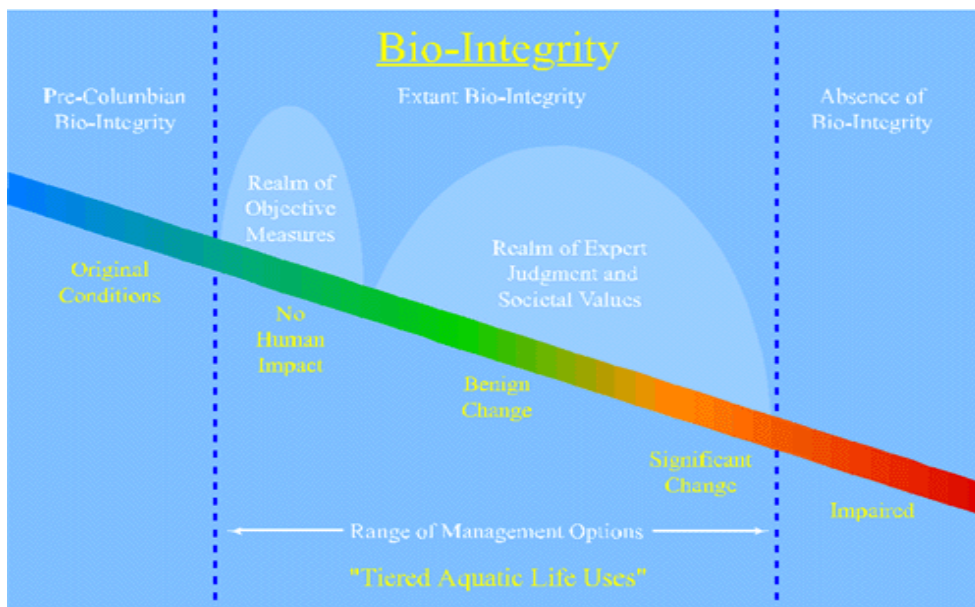
OTHER STATES’ CLASSIFICATION SYSTEMS

EPA has a web site and a database on state water quality standards (WQS) at <http://www.epa.gov/waterscience/standards/wqshome/>. Database reports showing designated uses (DUs) for each state can be downloaded. Basically, there are two methods by which states have assigned DUs to waterbodies. Some states, including all the New England states, have assigned groups of waterbodies to different CLASSES (in New Hampshire, there are two – Class A and Class B), with certain DUs or subcategories of DUs assigned to each class. Other states assign DUs directly to waterbodies or groups of waterbodies. To give an idea how this works, Attachment III contains tables from the EPA database showing the classes of waters with associated DUs for each New England state, and DU tables for some states that do not use classes.

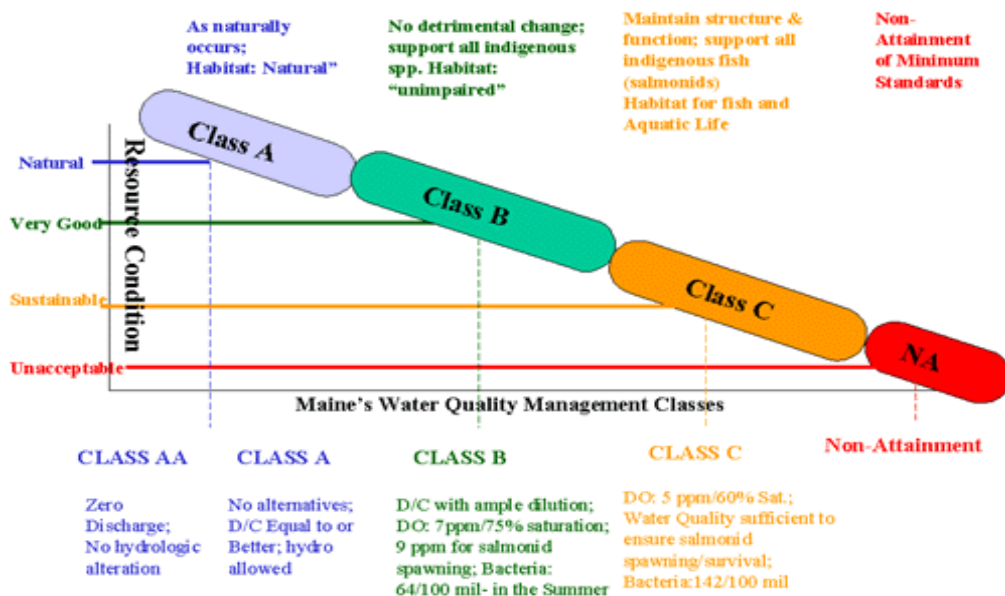
TIERED USES

A concept called Tiered Aquatic Life Use (TALU) has taken hold in recent years. According to this concept, the DU for aquatic life can be divided into several levels or tiers, with the highest being the least disturbed by human activity, and the lowest being most disturbed. Criteria can then be assigned to each tier that are appropriate to the level of human disturbance associated with the waterbody and its watershed. Maine has adopted this concept (Figure 2), as described at EPA’s website <http://www.epa.gov/waterscience/biocriteria/casestudies/aquaticlifemaine.html>

Figure 2: Conceptual Diagrams for Tiered Aquatic Life Use (from Maine)



Maine's Aquatic Life Management Classes



A TIERED DESIGNATED USE CONCEPT FOR NEW HAMPSHIRE WATERS

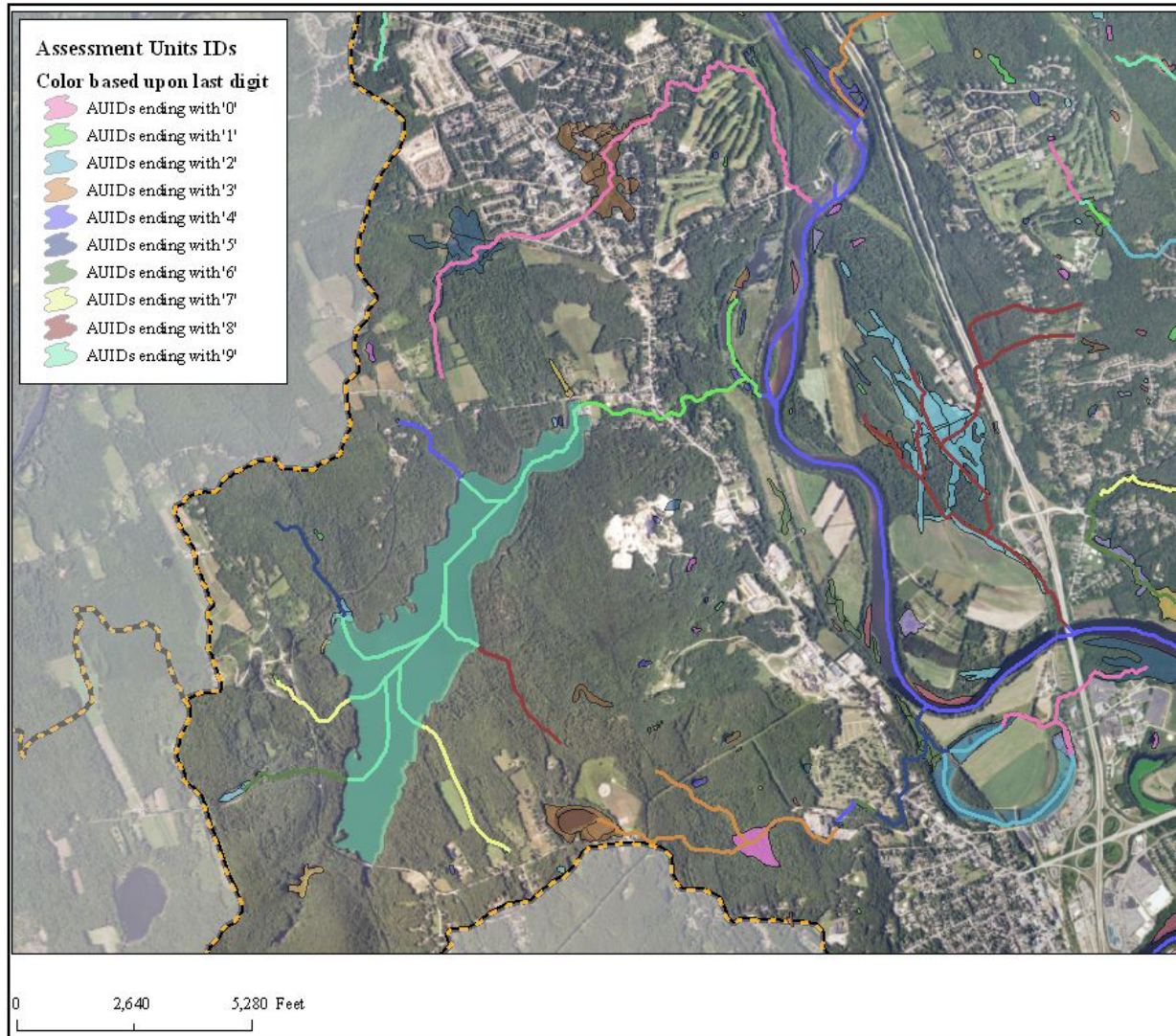
The TALU concept can readily be extended to other DUs. For each DU, two or more tiers could be created to which waterbodies could be assigned based on human disturbance, relative value for the use, or some measure of the goal for support of the use. The tiers would be based on a scale from "ideal" to "OK, but not great", similar to Maine's class scale in figure 2. The matrix in figure 1 shows how such a concept might be applied to current New Hampshire DUs as well as to the proposed geomorphic integrity DU. **These represent initial concepts only.** More, less, or different tiers could be created. Each tier would have associated narrative criteria that could be incorporated into statute. DES could then propose rules that would create numeric criteria based on the narratives in the law. This is quite similar to the approach taken by Maine (figure 2), although Maine has kept letter classes to identify tiers of aquatic life use for waterbodies.

HOW A MATRIX OF DESIGNATED USES AND SUBCLASSES WOULD WORK

DES now maintains a waterbody catalog in which waters of the state are mapped, assigned to one of six primary waterbody types (lake, river, impoundment, wetland, estuary, ocean), and then divided into "Assessment Units" (AUs). An AU is a piece of water that is homogeneous enough so that specific WQ criteria can be applied to determine if the designated uses are being supported. As of 2010, when the catalog moved to 1:24,000 scale mapping and NHHD drainage network, there are about 60,000 AUs statewide, of which about 51,000 are wetland AUs. Figure 3 shows AUs for a portion of the catalog in the vicinity of northwest Concord [including Horseshoe Pond]. For each AU, the designated use matrix would be applied, so that a tier would be assigned to each AU for each applicable designated use. Practically speaking, AUs would probably be grouped together and assigned a default tier for each designated use depending on the waterbody type, position in the watershed, tributary watershed, and similar characteristics. Proposed changes from the default tier assignments would be made based on local stakeholder input. DES would develop default tier assignments, publish them and

hold hearings in each major watershed as provided in RSA 485-A:9, and then develop a recommendation to the legislature for each AU.

Figure 3: Assessment Units (AUs) for Northwest Concord



TRANSITION TO A NEW CLASSIFICATION SYSTEM

The transition from the current classification system to a new, matrix-based system of designated uses and tiers for each AU will probably take several years. A sequence of events will be needed to provide an orderly and publicly vetted transition to the new system in which there is opportunity for development of the new DU tiers by DES and legislative review, as well as stakeholder input and EPA review and concurrence. This is likely to involve legislative action in successive sessions of the General Court. The outline below is a possible sequence of events and actions.

I. Phase 1: Legislature directs DES to prepare a report to the General Court recommending a new matrix-based system of designated uses and tiers for all waterbodies in the state, with associated criteria.

A. WQSAC working groups would draft legislation for consideration by RR&D for early fall 2010.

B. Due date for DES report could be early fall 2011, in time for introduction of legislation to implement the recommendations for the 2012 session.

C. DES would work with WQSAC and RR&D to complete and refine a tiered DU matrix, and test its application to all AUs.

D. WQSAC, RMAC and LMAC could help get the word out to stakeholders as the report develops.

E. DES would also develop criteria for the tiered DU matrix, based on the CALM, and prepare a crosswalk from the existing criteria to criteria under the new system.

F. DES and EPA would hold preliminary discussions on the transition to a new system, the need for Use Attainability Analyses, and other issues of consistency with the minimum requirements of the Clean Water Act.

II. Phase 2: (2012 session) Legislature receives DES report from phase 1. Legislation is enacted to adopt the new classification system, and proceed with reclassification.

A. The legislation would direct DES to use the RSA 485-A:9 process, including public outreach and hearings in each major watershed, to develop a recommendation to the legislature for reclassification of all waterbodies in the state to the new system by early fall 2013.

B. DES and EPA would continue to work on EPA approval aspects under the Clean Water Act. DOJ and EPA lawyers would participate in preparing a draft approval package for EPA.

III. Phase 3: (2013 session) Legislature receives DES recommendations for reclassification of all waterbodies in the state and holds hearings.

A. The legislation would set a specific date for the new classifications to become effective (likely in 2014).

B. The legislation would also direct DES to prepare an initial JLCAR proposal for revision of rules Env-Wq 1700, based on the criteria crosswalk between the current classification system and the new one, to be ready for adoption on the date that the new classifications become effective.

C. DES and DOJ would prepare final approval package for new WQS to be submitted to EPA.

ATTACHMENT II
DIFFERENCES IN CRITERIA
BETWEEN CLASS A AND CLASS B IN NEW HAMPSHIRE

WATER QUALITY CRITERIA FOR CLASS A WATERS COMPARED TO CLASS B

PARAMETER	CLASS A	CLASS B	SOURCE
QUALITY	"of the highest quality"	"of the second highest quality"	RSA 485-A:8
BACTERIA (e. coli) [unless naturally occurring]	47 60-d geometric mean	126 60-d geometric mean	
DISCHARGE OF SEWAGE OR WASTES	153 single sample "no discharge of any sewage or wastes"	406 single sample "adequate treatment" before discharge "no phosphorus or nitrogen...that would impair any existing or designated uses, unless naturally occurring"	RSA 485-A:8
NUTRIENTS	"no phosphorus or nitrogen unless naturally occurring" 75% sat. daily average	75% sat. daily average	Env-Ws 1700
DISSOLVED OXYGEN	6 mg/l instantaneous minimum	5 mg/l instantaneous minimum	Env-Ws 1700
Ph	not specified	6.5-8.0 except natural	RSA 485-A:8
BENTHIC DEPOSITS	none unless naturally occurring	no detrimental impact on benthic community	Env-Ws 1700
OIL AND GREASE	none unless naturally occurring	no existing or designated use impairment	Env-Ws 1700
COLOR	none unless naturally occurring	no existing or designated use impairment	Env-Ws 1700
TURBIDITY	none unless naturally occurring	10 NTUs over natural	Env-Ws 1700
SLICKS, ODORS, SURFACE FLOATING SOLIDS	none unless naturally occurring	no existing or designated use impairment	Env-Ws 1700
TEMPERATURE	no change unless naturally occurring	no change from discharges that interferes with designated use	Env-Ws 1700 /RSA 485-A:8

ATTACHMENT III – OTHER STATES’ DESIGNATED USES

(From EPA’s National Designated Use Database)

	Class Name	Class Description	Associated State Designated Use(s)
NH	Class A	Class A waters shall be of the highest quality and shall contain not more than either a geometric mean based on at least 3 samples obtained over a 60-day period of 47 <i>Escherichia coli</i> per 100 milliliters, or greater than 153 <i>Escherichia coli</i> per 100 milliliters in any one sample; and for designated beach areas shall contain not more than a geometric mean based on at least 3 samples obtained over a 60-day period of 47 <i>Escherichia coli</i> per 100 milliliters, or 88 <i>Escherichia coli</i> per 100 milliliters in any one sample; unless naturally occurring. There shall be no discharge of any sewage or wastes into waters of this classification. The waters of this classification shall be considered as being potentially acceptable for water supply uses after adequate treatment.	Aquatic Life Cold Water Fishery Designated Beach Drinking Water Supply Fish Consumption Primary Contact Recreation Secondary Contact Recreation Wildlife
NH	Class B (Fresh Waters)	Class B waters shall be of the second highest quality and shall have no objectionable physical characteristics, shall contain a dissolved oxygen content of at least 75 percent of saturation, and shall contain not more than either a geometric mean based on at least 3 samples obtained over a 60-day period of 126 <i>Escherichia coli</i> per 100 milliliters, or greater than 406 <i>Escherichia coli</i> per 100 milliliters in any one sample; and for designated beach areas shall contain not more than a geometric mean based on at least 3 samples obtained over a 60-day period of 47 <i>Escherichia coli</i> per 100 milliliters, or 88 <i>Escherichia coli</i> per 100 milliliters in any one sample; unless naturally occurring. There shall be no disposal of sewage or waste into said waters except those, which have received adequate treatment to prevent the lowering of the biological, physical, chemical or bacteriological characteristics below those given above, nor shall such disposal of sewage or waste be inimical to aquatic life or to the maintenance of aquatic life in said receiving waters. The pH range for said waters shall be 6.5 to 8.0 except when due to natural causes. Any stream temperature increase associated with the discharge of treated sewage, waste or cooling water, water diversions, or releases shall not be such as to appreciably interfere with the uses assigned to this class. The waters of this classification shall be considered as being acceptable for fishing, swimming and other recreational purposes and, after adequate treatment, for use as water supplies. Where it is demonstrated to the satisfaction of the department that the class B criteria cannot reasonably be met in certain surface waters at all times as a result of combined sewer overflow events, temporary partial use areas shall be established by rules adopted under RSA 485-A: 6, XI-c, which meet, as a minimum, the standards specified in paragraph III.	Aquatic Life Cold Water Fishery Designated Beach Drinking Water Supply Fish Consumption Primary Contact Recreation Secondary Contact Recreation Wildlife
NH	Class B (Temporary Partial Use)	Where it is demonstrated to the satisfaction of the department that the class B criteria cannot reasonably be met in certain surface waters at all times as a result of combined sewer overflow events, temporary partial use areas shall be established by rules adopted under RSA 485-A:6, XI-c, which meet, as a minimum, the standards specified in paragraph III. (RSA 485-A:8,III) The waters in temporary partial use areas established under paragraph II shall be free from slick, odors, turbidity, sludge deposits, and surface-floating solids of unreasonable kind or quantity, shall contain not less than 5 parts per million of dissolved oxygen; shall have a hydrogen ion concentration within the range of pH 6.0 to 9.0 except when due to natural causes; and shall be free from chemicals and other materials and conditions inimical to aquatic life or the maintenance of aquatic life. These criteria shall apply during combined sewer overflow discharges and up to 3 days following cessation of said discharge. At all other times the standards and uses specified in "Class B" shall apply.	Aquatic Life Fish Consumption Wildlife
NH	Class B (Tidal Waters)	"Same as for Class B (Fresh Waters) with the following exceptions: 1) The use of drinking water after adequate treatment is not a use which is currently applied to tidal waters, and 2) the bacteria requirements for tidal waters utilized for swimming purposes are no more than either a geometric mean based on at least 3 samples obtained over a 60-day period of 35 enterococci per 100 milliliters, or 104 enterococci per 100 milliliters in any one sample, unless naturally occurring. Those tidal waters used for growing or taking of shellfish for human consumption shall, in addition to the foregoing requirements, be in accordance with the criteria recommended under the National Shellfish Program Manual of Operation, United States Department of Food and Drug Administration. "	Aquatic Life Cold Water Fishery Designated Beach Fish Consumption Primary Contact Recreation Secondary Contact Recreation Shellfish Consumption Wildlife

	Class Name	Class Description	Associated State Designated Use(s)
CT	Coastal and Marine Surface Waters Class SA	Habitat for marine fish, other aquatic life and wildlife; shellfish harvesting for direct human consumption where authorized; recreation; industrial water supply; and navigation.	Fish Consumption Habitat For Marine Fish, Other Aquatic Life And Wildlife Industrial Supply Navigation Recreation Shellfish Harvesting For Direct Consumption Where Authorized
CT	Coastal and Marine Surface Waters Class SB	Habitat for marine fish, other aquatic life and wildlife; commercial shellfish harvesting where authorized; recreation; industrial water supply; and navigation.	Commercial Shellfish Harvesting Where Authorized Fish Consumption Habitat For Marine Fish, Other Aquatic Life And Wildlife Industrial Supply Navigation Recreation
CT	Inland Surface Waters Class A	Habitat for fish and other aquatic life and wildlife; potential drinking water supplies; recreation; and water supply for industry and agriculture.	Agriculture Fish Consumption Habitat For Fish, Other Aquatic Life And Wildlife Industrial Supply Potential Drinking Water Supplies Recreation
CT	Inland Surface Waters Class AA	Existing or proposed drinking water supplies; habitat for fish and other aquatic life and wildlife; recreation; and water supply for industry and agriculture.	Agriculture Existing Or Proposed Drinking Water Fish Consumption Habitat For Fish, Other Aquatic Life And Wildlife Industrial Supply Recreation
CT	Inland Surface Waters Class B	Habitat for fish and other aquatic life and wildlife; recreation; and industrial and agricultural water supply.	Agriculture Fish Consumption Habitat For Fish, Other Aquatic Life And Wildlife Industrial Supply Recreation

	Class Name	Class Description	Associated State Designated Use(s)
ME	Class A	Class A shall be the second highest fresh surface water classification. Class A waters shall be of such quality that they are suitable for the designated uses of drinking water after disinfection; fishing; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation, except as prohibited under Title 12, section 403; and navigation; and as habitat for fish and other aquatic life. The habitat shall be characterized as natural.	Drinking Water Supply After Disinfection Fish And Other Aquatic Life Fish Consumption Fishing Hydroelectric Power Generation Industrial Process And Cooling Water Supply Navigation Primary Contact Recreation Secondary Contact Recreation Wildlife
ME	Class AA	Class AA shall be the highest fresh surface water classification and shall be applied to waters which are outstanding natural resources and which should be preserved because of their ecological, social, scenic or recreational importance. Class AA waters shall be of such quality that they are suitable for the designated uses of drinking water after disinfection, fishing, recreation in and on the water and navigation and as habitat for fish and other aquatic life. The habitat shall be characterized as free flowing and natural.	Drinking Water Supply After Disinfection Fish And Other Aquatic Life Fish Consumption Fishing Navigation Primary Contact Recreation Secondary Contact Recreation Wildlife
ME	Class B	Class B shall be the third highest fresh surface water classification. Class B waters shall be of such quality that they are suitable for the designated uses of drinking water supply after treatment; fishing; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation, except as prohibited under Title 12, section 403; and navigation; and as habitat for fish and other aquatic life. The habitat shall be characterized as unimpaired.	Drinking Water Supply After Treatment Fish And Other Aquatic Life Fish Consumption Fishing Hydroelectric Power Generation Industrial Process And Cooling Water Supply Navigation Primary Contact Recreation Secondary Contact Recreation Wildlife
ME	Class C	Class C shall be the fourth highest fresh surface water classification. Class C waters shall be of such quality that they are suitable for the designated uses of drinking water supply after treatment; fishing; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation, except as prohibited under Title 12, section 403; and navigation; and as a habitat for fish and other aquatic life.	Drinking Water Supply After Treatment Fish And Other Aquatic Life Fish Consumption Fishing Hydroelectric Power Generation Industrial Process And Cooling Water Supply Navigation Primary Contact Recreation Secondary Contact Recreation Wildlife
ME	Class GPA	Class GPA shall be the sole classification of great ponds and natural ponds and lakes less than 10 acres in size. Class GPA waters shall be of such quality that they are suitable for the designated uses of drinking water after disinfection, recreation in and on the water, fishing, industrial process and cooling water supply, hydroelectric power generation and navigation and as habitat for fish and other aquatic life. The habitat shall be characterized as natural. [1985, c. 698, § 15 (new).]	Drinking Water Supply After Disinfection Fish And Other Aquatic Life Fish Consumption Fishing Hydroelectric Power Generation Industrial Process And Cooling Water Supply Navigation Primary Contact Recreation Secondary Contact Recreation Wildlife
ME	Class SA	Class SA shall be the highest estuarine and marine waters classification and shall be applied to waters which are outstanding	Aquaculture Fish And Other Estuarine And Marine Life

		natural resources and which should be preserved because of their ecological, social, scenic, economic or recreational importance. Class SA waters shall be of such quality that they are suitable for the designated uses of recreation in and on the water, fishing, aquaculture, propagation and harvesting of shellfish and navigation and as habitat for fish and other estuarine and marine life. The habitat shall be characterized as free-flowing and natural.	Fish Consumption Fishing Navigation Primary Contact Recreation Propagation And Harvesting Of Shellfish Secondary Contact Recreation Wildlife
ME	Class SB	Class SB shall be the second highest estuarine and marine waters classification. Class SB waters shall be of such quality that they are suitable for the designated uses of recreation in and on the water, fishing, aquaculture, propagation and harvesting of shellfish, industrial process and cooling water supply, hydroelectric power generation and navigation and as habitat for fish and other estuarine and marine life. The habitat shall be characterized as unimpaired.	Aquaculture Fish And Other Estuarine And Marine Life Fish Consumption Fishing Hydroelectric Power Generation Industrial Process And Cooling Water Supply Navigation Primary Contact Recreation Propagation And Harvesting Of Shellfish Secondary Contact Recreation Wildlife
ME	Class SC	Class SC shall be the third highest estuarine and marine waters classification. Class SC waters shall be of such quality that they are suitable for recreation in and on the water, fishing, aquaculture, propagation and restricted harvesting of shellfish, industrial process and cooling water supply, hydroelectric power generation and navigation and as a habitat for fish and other estuarine and marine life.	Aquaculture Fish And Other Estuarine And Marine Life Fish Consumption Fishing Hydroelectric Power Generation Industrial Process And Cooling Water Supply Navigation Primary Contact Recreation Propagation And Restricted Harvesting Of Shellfish Secondary Contact Recreation Wildlife

	Class Name	Class Description	Associated State Designated Use(s)
MA	Class A	These waters are designated as a source of public water supply. To the extent compatible with this use they shall be an excellent habitat for fish, other aquatic life and wildlife, and suitable for primary and secondary contact recreation. These waters shall have excellent aesthetic value. These waters are designated for protection as Outstanding Resource Waters.	Aesthetic Fish, Other Aquatic Life And Wildlife Outstanding Resource Waters Primary Contact Recreation Public Water Supply Secondary Contact Recreation Shellfish Harvesting
MA	Class B	These waters are designated as a habitat for fish, other aquatic life, and wildlife, and for primary and secondary contact recreation. Where designated they shall be suitable as a source of public water supply with appropriate treatment. They shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling process uses. These waters shall have consistently good aesthetic value.	Aesthetic Agriculture Fish, Other Aquatic Life And Wildlife Industrial Cooling Primary Contact Recreation Public Water Supply Secondary Contact Recreation Shellfish Harvesting
MA	Class C	These waters are designated as a habitat for fish, other aquatic life, and wildlife, and for secondary contact recreation. These waters shall be suitable for the irrigation of crops used for consumption after cooking and for compatible industrial cooling and processing uses. These waters shall have good aesthetic value.	Aesthetic Agriculture Fish, Other Aquatic Life And Wildlife Industrial Cooling Secondary Contact Recreation Shellfish Harvesting
MA	Class SA	These waters are designated as an excellent habitat for fish, other aquatic life and wildlife and for primary and secondary contact recreation. In approved areas they shall be suitable for shellfish harvesting without depuration (Open Shellfish Areas). These waters shall have excellent aesthetic value.	Aesthetic Fish Consumption Fish, Other Aquatic Life And Wildlife Industrial Cooling Secondary Contact Recreation Shellfish Harvesting
MA	Class SB	These waters are designated as a habitat for fish, other aquatic life and wildlife and for primary and secondary contact recreation. In approved areas they shall be suitable for shellfish harvesting with depuration (Restricted Shellfish Areas). These waters shall have consistently good aesthetic value.	Aesthetic Fish Consumption Fish, Other Aquatic Life And Wildlife Primary Contact Recreation Public Water Supply Shellfish Harvesting
MA	Class SC	These waters are designated as a habitat for fish, other aquatic life and wildlife, and for secondary contact recreation. They shall also be suitable for certain industrial cooling and process uses. These waters shall have good aesthetic value.	Aesthetic Fish, Other Aquatic Life And Wildlife Industrial Cooling Secondary Contact Recreation Shellfish Harvesting

	Class Name	Class Description	Associated State Designated Use(s)
RI	Class A	These waters are designated for primary and secondary contact recreational activities and for fish and wildlife habitat. They shall be suitable for compatible industrial processes and cooling, hydropower, aquacultural uses, navigation, and irrigation and other agricultural uses. These waters shall have excellent aesthetic value.	Fish And Wildlife Habitat Fish Consumption Primary Contact Recreation Secondary Contact Recreation
RI	Class AA	These waters are designated as a source of public drinking water supply (PDWS) or as tributary waters within a public drinking water supply watershed (the terminal reservoir of the PDWS are identified in Appendix A), for primary and secondary contact recreational activities and for fish and wildlife habitat. These waters shall have excellent aesthetic value.	Fish And Wildlife Habitat Fish Consumption Primary Contact Recreation Public Drinking Water Supply Secondary Contact Recreation
RI	Class B	These waters are designated for fish and wildlife habitat and primary and secondary contact recreational activities. They shall be suitable for compatible industrial processes and cooling, hydropower, aquacultural uses, navigation, and irrigation and other agricultural uses. These waters shall have good aesthetic value.	Fish And Wildlife Habitat Fish Consumption Primary Contact Recreation Secondary Contact Recreation
RI	Class B1	These waters are designated for primary and secondary contact recreational activities and fish and wildlife habitat. They shall be suitable for compatible industrial processes and cooling, hydropower, aquacultural uses, navigation, and irrigation and other agricultural uses. These waters shall have good aesthetic value. Primary contact recreational activities may be impacted due to pathogens from approved wastewater discharges. However all Class B criteria must be met.	Fish And Wildlife Habitat Fish Consumption Primary Contact Recreation Secondary Contact Recreation
RI	Class B1{a}	These waters are designated for primary and secondary contact recreational activities and fish and wildlife habitat. They shall be suitable for compatible industrial processes and cooling, hydropower, aquacultural uses, navigation, and irrigation and other agricultural uses. These waters shall have good aesthetic value. Primary contact recreational activities may be impacted due to pathogens from approved wastewater discharges. However all Class B criteria must be met. These waters will likely be impacted by combined sewer overflows in accordance with approved CSO Facilities Plans and in compliance with Rule 19.E.1 of the Water Quality Regulations and the Rhode Island CSO Policy. Therefore, primary contact recreational activities; shellfishing uses; and fish and wildlife habitat will likely be restricted.	Fish And Wildlife Habitat Fish Consumption Primary Contact Recreation Secondary Contact Recreation
RI	Class B{a}	These waters are designated for fish and wildlife habitat and primary and secondary contact recreational activities. They shall be suitable for compatible industrial processes and cooling, hydropower, aquacultural uses, navigation, and irrigation and other agricultural uses. These waters shall have good aesthetic value. These waters will likely be impacted by combined sewer overflows in accordance with approved CSO Facilities Plans and in compliance with Rule 19.E.1 of the Water Quality Regulations and the Rhode Island CSO Policy. Therefore, primary contact recreational activities; shellfishing uses; and fish and wildlife habitat will likely be restricted.	Fish And Wildlife Habitat Fish Consumption Primary Contact Recreation Secondary Contact Recreation
RI	Class C	These waters are designated for secondary contact recreational activities and fish and wildlife habitat. They shall be suitable for compatible industrial processes and cooling, hydropower, aquacultural uses, navigation, and irrigation and other agricultural uses. These waters shall have good aesthetic value.	Fish And Wildlife Habitat Fish Consumption Primary Contact Recreation
RI	Class SA	These waters are designated for shellfish harvesting for direct human consumption, primary and secondary contact recreational activities, and fish and wildlife habitat. They shall be suitable for aquacultural uses, navigation, and industrial cooling. These waters shall have good aesthetic value.	Fish And Wildlife Habitat Fish Consumption Primary Contact Recreation Secondary Contact Recreation Shellfish Consumption
RI	Class SA{b}	These waters are designated for shellfish harvesting for direct human consumption, primary and secondary contact recreational activities, and fish and wildlife habitat. They shall be suitable for aquacultural uses, navigation, and industrial cooling. These waters shall have good aesthetic value. These waters are in the vicinity of marinas and/or mooring fields and therefore seasonal shellfishing closures will likely be required as listed in the most recent (revised annually) RIDEM document entitled Shellfish Closure Areas, however, all Class SA criteria must be attained.	Fish And Wildlife Habitat Fish Consumption Primary Contact Recreation Secondary Contact Recreation Shellfish Consumption
RI	Class SB	These waters are designated for primary and secondary contact recreational activities; shellfish harvesting for controlled relay and depuration; and fish and wildlife habitat. They	Fish And Wildlife Habitat Fish Consumption

		shall be suitable for aquacultural uses, navigation, and industrial cooling. These waters shall have good aesthetic value.	Primary Contact Recreation Secondary Contact Recreation Shellfish Controlled Relay And Depuration
RI	Class SB1	These waters are designated for primary and secondary contact recreational activities and fish and wildlife habitat. They shall be suitable for aquacultural uses, navigation, and industrial cooling. These waters shall have good aesthetic value. Primary contact recreational activities may be impacted due to pathogens from approved wastewater discharges. However all Class SB criteria must be met.	Fish And Wildlife Habitat Fish Consumption Primary Contact Recreation Secondary Contact Recreation
RI	Class SB1{a}	These waters are designated for primary and secondary contact recreational activities and fish and wildlife habitat. They shall be suitable for aquacultural uses, navigation, and industrial cooling. These waters shall have good aesthetic value. Primary contact recreational activities may be impacted due to pathogens from approved wastewater discharges. However all Class SB criteria must be met. These waters will likely be impacted by combined sewer overflows in accordance with approved CSO Facilities Plans and in compliance with Rule 19.E.1 of the Water Quality Regulations and the Rhode Island CSO Policy. Therefore, primary contact recreational activities; shellfishing uses; and fish and wildlife habitat will likely be restricted.	Fish And Wildlife Habitat Fish Consumption Primary Contact Recreation Secondary Contact Recreation
RI	Class SB{a}	These waters are designated for primary and secondary contact recreational activities; shellfish harvesting for controlled relay and depuration; and fish and wildlife habitat. They shall be suitable for aquacultural uses, navigation, and industrial cooling. These waters shall have good aesthetic value. These waters will likely be impacted by combined sewer overflows in accordance with approved CSO Facilities Plans and in compliance with Rule 19.E.1 of the Water Quality Regulations and the Rhode Island CSO Policy. Therefore, primary contact recreational activities; shellfishing uses; and fish and wildlife habitat will likely be restricted.	Fish And Wildlife Habitat Fish Consumption Primary Contact Recreation Secondary Contact Recreation Shellfish Controlled Relay And Depuration
RI	Class SC	These waters are designated for secondary contact recreational activities, and fish and wildlife habitat. They shall be suitable for aquacultural uses, navigation, and industrial cooling. These waters shall have good aesthetic value.	Fish And Wildlife Habitat Fish Consumption Secondary Contact Recreation

	Class Name	Class Description	Associated State Designated Use(s)
VT	Class B Water Management Type One Waters	Class B waters which significantly exceed the minimum requirements for Class B waters and therefore should be aggressively managed to retain existing high water quality	
VT	Class B Water Management Type Three Waters	Class B waters which are maintained to meet the minimum Class B requirements but also recognizes that certain discharges of waste may cause an acceptable variability in water quality.	
VT	Class B Water Management Type Two Waters	Class B waters which generally exceed the minimum requirements for Class B waters but are also impacted by a number of discharges of wastes from appropriate land uses.	
VT	Class B Waters	Waters shall be managed to achieve and maintain a level of quality that fully supports: aquatic biota, wildlife, and aquatic habitat; aesthetics; public water supply; irrigation of crops and other agricultural uses; swimming and other primary contact recreation; and boating, fishing, and other recreational uses.	Aesthetic Aquatic Biota, Wildlife, And Aquatic Habitat Boating, Fishing, And Other Recreational Uses Cold Water Fishery Fish Consumption Irrigation Of Crops And Other Agricultural Uses Public Water Supply Swimming And Other Primary Contact Recreation Warm Water Fishery
VT	Ecological Waters	Managed to achieve and maintain waters in a natural condition, compatible with: aquatic biota, wildlife and aquatic habitat; aesthetics; swimming and other primary contact recreation; and boating, fishing and other recreational uses.	Aesthetic Aquatic Biota, Wildlife, And Aquatic Habitat Boating, Fishing, And Other Recreational Uses Cold Water Fishery Fish Consumption Swimming And Other Primary Contact Recreation Warm Water Fishery
VT	Public Water Supplies	Waters managed for public water supply purposes to achieve and maintain waters with a uniformly excellent character and a level of water quality that is compatible with: aquatic biota, wildlife and aquatic habitat; aesthetics; swimming and other primary contact recreation; boating, fishing, and other recreational uses; and public water supply.	Aesthetic Aquatic Biota, Wildlife, And Aquatic Habitat Boating, Fishing, And Other Recreational Uses Cold Water Fishery Fish Consumption Public Water Supply Swimming And Other Primary Contact Recreation Warm Water Fishery

	Designated Use Name	Designated Use Description
CA1	Agricultural Supply	Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.
CA1	Aquaculture	Uses of water for aquaculture or mariculture operations including, but not limited to, propagation, cultivation, maintenance, or harvesting of aquatic plants and animals for human consumption or bait purposes.
CA1	Cold Freshwater Habitat	Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
CA1	Estuarine Habitat	Uses of water that support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds).
CA1	Flood Peak Attenuation/Flood Water Storage	Beneficial Uses of riparian wetlands in flood plain areas and other wetlands that receive natural surface drainage and buffer its passage to receiving waters.
CA1	Freshwater Replenishment	Uses of water for natural or artificial maintenance of surface water quantity or quality (e.g., salinity).
CA1	Groundwater Recharge	Uses of water for natural or artificial recharge of groundwater for purposes of future extraction, maintenance of water quality, or halting saltwater intrusion into freshwater aquifers.
CA1	Hydropower Generation	Uses of water for hydropower generation.
CA1	Industrial Process Supply	Uses of water for industrial activities that depend primarily on water quality.
CA1	Industrial Service Supply	Uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well repressurization.
CA1	Inland Saline Water Habitat	Uses of water that support inland saline water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
CA1	Marine Habitat	Uses of water that support marine ecosystems including, but not limited to, preservation or enhancement of marine habitats, vegetation such as kelp, fish, shellfish, or wildlife (e.g., marine mammals, shorebirds).
CA1	Migration Of Aquatic Organisms	Uses of water that support habitats necessary for migration or other temporary activities by aquatic organisms, such as anadromous fish.
CA1	Municipal And Domestic Supply	Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.
CA1	Native American Culture	Uses of water that support the cultural and/or traditional rights of indigenous people such as subsistence fishing, basket weaving and jewelry material collection, navigation to traditional ceremonial locations, and ceremonial uses.
CA1	Navigation	Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.
CA1	Non-Contact Water Recreation	Uses of water for recreational activities involving proximity to water, but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.
CA1	Ocean Commercial And Sport Fishing	Uses of water for commercial or recreational (sport) collection of fish, shellfish, or other aquatic organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes.
CA1	Preservation Of Biological Habitats Of Special Significance	Includes marine life refuges, ecological reserves and areas of special biological significance, such as areas where kelp propagation and maintenance are features of the marine environment requiring special protection.
CA1	Rare, Threatened, Or Endangered Species	Uses of water that support aquatic habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened or endangered.

CA1	Shellfish Harvesting	Uses of water that support habitats suitable for the collection of filter-feeding shellfish (e.g., clams, oysters, and mussels) for human consumption, commercial, or sports purposes.
CA1	Spawning, Reproduction, And/Or Early Development	Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.
CA1	Subsistence Fishing	Uses of water that support subsistence fishing
CA1	Warm Freshwater Habitat	Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
CA1	Water Contact Recreation	Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.
CA1	Water Quality Enhancement	Beneficial uses of waters, including wetlands and other waterbodies, that support natural enhancement or improvement of water quality in or downstream of a waterbody including, but not limited to, erosion control, filtration and purification of naturally occurring water pollutants, streambank stabilization, maintenance of channel integrity, and siltation control.
CA1	Wetland Habitat	Uses of water that support natural and man-made wetland ecosystems, including, but not limited to, preservation or enhancement of unique wetland functions, vegetation, fish, shellfish, invertebrates, insects, and wildlife habitat.
CA1	Wildlife Habitat	Uses of water that support terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

	Designated Use Name	Designated Use Description
TX	Agricultural Water Supply	Segments designated for public water supply are those known to be used as the supply source for agricultural water supplies
TX	Contact Recreation	Recreational activities involving a significant risk of ingestion of water, including wading by children, swimming, water skiing, diving, and surfing.
TX	Domestic Water Supply - Aquifer Protection	Segments designated for aquifer protection are capable of recharging the Edwards Aquifer. The principal purpose of this use designation is to protect the quality of water infiltrating into and recharging the aquifer.
TX	Domestic Water Supply - Public Water Supply	Segments designated for public water supply are those known to be used as the supply source for public water systems, as defined by Chapter 290 of this title (relating to Water Hygiene).
TX	Exceptional Aquatic Life	Aquatic Life Use Subcategory: Exceptional. Habitat Characteristics: outstanding natural variability. Species Assemblage: exceptional or unusual. Sensitive Species: abundant. Diversity: exceptionally high. Species Richness: exceptionally high. Trophic Structure: balanced.
TX	High Aquatic Life	Aquatic Life Use Subcategory: High. Habitat Characteristics: highly diverse. Species Assemblage: usual association of regionally expected species. Sensitive Species: present. Diversity: high. Species Richness: high. Trophic Structure: balanced to slightly imbalanced.
TX	Industrial Water Supply	Segments designated for public water supply are those known to be used as the supply source for industrial water supplies.
TX	Intermediate Aquatic Life	Aquatic Life Use Subcategory: Intermediate. Habitat Characteristics: moderately diverse. Species Assemblage: some expected species. Sensitive Species: very low in abundance. Diversity: moderate. Species Richness: moderate. Trophic Structure: moderately imbalanced.
TX	Limited Aquatic Life	Aquatic Life Use Subcategory: Limited. Habitat Characteristics: uniform. Species Assemblage: most regionally expected species absent. Sensitive Species: absent. Diversity: low. Species Richness: low. Trophic Structure: severely imbalanced.
TX	Navigation	Recreational pursuits not involving a significant risk of water ingestion, including commercial and recreational boating.
TX	Non-Contact Recreation	Noncontact recreation - Recreational pursuits not involving a significant risk of water ingestion, including fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity.
TX	Oyster Aquatic Life	Oyster waters should be maintained so that concentrations of toxic materials do not cause edible species of clams, oysters, and mussels to exceed accepted guidelines for the protection of public health. Guidelines are provided by U.S. Food and Drug Administration Action Levels for molluscan shellfish.
TX	Presumed High Aquatic Life	Unclassified waterbodies with aquatic life--perennial streams, rivers, lakes, bays, estuaries, and other appropriate perennial waters which are not specifically listed in Texas Water Quality Standards--are presumed to have a high aquatic life use. Upon administrative or regulatory action by the commission which affects a particular unclassified waterbody, the characteristics of the affected waterbody will be reviewed to determine which aquatic life uses are appropriate.
TX	Waterfowl Habitat	The Rita Blanca Lake is designated as high quality waterfowl (WF) habitat.

	Designated Use Name	Designated Use Description
TN	Domestic Water Supply	This designated use protects and serves as sources of water supply for state domestic water supplies.
TN	Fish And Aquatic Life	This designated use protects the propagation and maintenance of fish and other aquatic life.
TN	Industrial Water Supply	The objective of this designated use is to serve as sources of water supply for industrial purposes and generation of power.
TN	Irrigation	The objective of this designated use is to serve as sources of water used for irrigation.
TN	Livestock Watering And Wildlife	The objective of this designated use is to serve as sources of water used for livestock watering, in addition to the propagation and maintenance of wildlife.
TN	Naturally Reproducing Trout Stream	This designated use protects sources of water that support the propagation and maintenance of naturally reproducing trout streams.
TN	Navigation	This designated use protects waters for state navigation. There shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character as to interfere with navigation. The waters shall not contain other pollutants in quantities which may be detrimental to the waters used for navigation.
TN	Recreation	The objective of this use is to protect recreation in and on the waters including the safe consumption of fish and shellfish.
TN	Trout Stream	This designated use protects sources of water that support the propagation and maintenance of trout streams.

OH	Agricultural Water Supply	These are waters suitable for irrigation and livestock watering without treatment.
OH	Bathing Waters	These are waters that, during the recreation season, are suitable for swimming where a lifeguard and/or bathhouse facilities are present, and include any additional such areas where the water quality is approved by the director. Water bodies assigned the bathing waters use designation are not necessarily indicated in rules 3745-1-08 to 3745-1-30 of the Administrative Code but include local areas of those water bodies meeting this definition.
OH	Coldwater Aquatic Life Habitat	These waters meet one or both of these characteristics: a.) These waters support trout stocking and management under the auspices of the Ohio DNR, division of wildlife, excluding waters in lake run stocking programs, lake or reservoir stocking programs, experimental or trial stocking programs and put and take programs on waters without, or without the potential restoration of, natural coldwater attributes of temperature and flow. The director shall designate these waters in consultation with the director of the Ohio DNR; b.) These waters support populations of native coldwater fish and associated vertebrate and invertebrate organisms and plants on an annual basis. The director shall designate these waters based upon results of UAA.
OH	Exceptional Warmwater Aquatic Life Habitat	These are waters capable of supporting and maintaining an exceptional or unusual community of warmwater aquatic organisms having a species composition, diversity, and functional organization comparable to the 75th percentile of the identified reference sites on a statewide basis. Attributes are measured using index of biotic integrity, modified index of well-being and invertebrate community index as defined in Users Manual. All lakes and reservoirs, except upground storage reservoirs, are also EWH. Attainment of use (except for lakes and reservoirs) is based on criteria in table 7-14.
OH	Industrial Water Supply	These are waters suitable for commercial and industrial uses, with or without treatment. Criteria for the support of the industrial water supply use designation will vary with the type of industry involved.
OH	Limited Resource Waters	These waters via UAA lack the potential for any resemblance of any other aquatic life habitat as determined by the biological criteria in table 7-14. The UAA must demonstrate that the extant fauna is substantially degraded and that the potential for recovery to the level characteristic of any other aquatic life habitat is realistically precluded due to natural background conditions or irretrievable human-induced conditions. Review triennially. LRWs are assigned one or more of the following causative factors: acid mine drainage, small drainageway maintenance, other specified conditions.

OH	Limited Warmwater Aquatic Life Habitat	These are waters that were temporarily designated in the 1978 water quality standards as not meeting specific warmwater habitat criteria. Criteria for the support of this use match criteria for warmwater habitat. However, individual criteria are varied on a case-by-case basis and supersede the criteria for warmwater habitat where applicable. Any exceptions from warmwater habitat criteria apply only to specific criteria during specified time periods and/or flow conditions. The adjusted criteria and conditions for specified stream segments are denoted as comments in rules 3745-1-08 to 3745-1-30. Stream segments currently designated LWH will undergo UAA and will be redesignated other aquatic life habitats. No additional stream segments will be designated LWH.
OH	Modified Warmwater Aquatic Life Habitat	These waters via UAA are incapable of supporting and maintaining a balanced, integrated, adaptive community of warmwater organisms due to irretrievable mods of physical habitat. Such mods last 20 or more years and may include: extensive stream channel mod activities permitted under sections 401 and 404 of the act or Chapter 6131 Revised Code, extensive sedimentation resulting from abandoned mine land runoff, and extensive permanent impoundment of free-flowing water bodies. Attributes are measured using index of biotic integrity, modified index of well-being and invertebrate community index as defined in Users Manual. Attainment of use is based on criteria in table 7-14. Review triennially.
OH	Primary Contact Recreation	These are waters that, during the recreation season, are suitable for full-body contact recreation such as, but not limited to, swimming, canoeing, and scuba diving with minimal threat to public health as a result of water quality. In addition to those water body segments designated in rules 3745-1-08 to 3745-1-32 of the Administrative Code, all lakes and reservoirs, except upground storage reservoirs and those lakes and reservoirs meeting the definition of bathing waters, are designated primary contact recreation.
OH	Public Water Supply	These are waters that, with conventional treatment, will be suitable for human intake and meet federal regulations for drinking water. Criteria associated with this use designation apply within five hundred yards of surface water intakes. Although not necessarily included in rules 3745-1-08 to 3745-1-30 of the Administrative Code, the bodies of water with one or more of the following characteristics are designated public water supply: (i) All publicly owned lakes and reservoirs, with the exception of Piedmont reservoir; (ii) All privately owned lakes and reservoirs used as a resource of public drinking water; (iii) All surface waters within five hundred yards of an existing public water supply surface water intake; (iv) All surface waters used as emergency water supplies.
OH	Seasonal Salmonid Aquatic Life Habitat	These are rivers, streams and embayments capable of supporting the passage of salmonids from October to May and are water bodies large enough to support recreational fishing. This use will be in effect the months of October to May. Another aquatic life habitat use designation will be enforced the remainder of the year (June to September). A temporary variance to the criteria associated with this use designation may be granted as described in paragraph (F) of rule 3745-1-01 of the Administrative Code.
OH	Secondary Contact Recreation	These are waters that, during the recreation season, are suitable for partial body contact recreation such as, but not limited to, wading with minimal threat to public health as a result of water quality.
OH	State Resource Waters	These are surface waters so designated in rules 3745-1-08 to 3745-1-30 of the Administrative Code and all publicly owned lakes and reservoirs.
OH	Warmwater Aquatic Life Habitat	These are waters capable of supporting and maintaining a balanced, integrated, adaptive community of warmwater aquatic organisms having a species composition, diversity and functional organization (ScDFo) comparable to the 25th percentile of reference sites in these ecoregions: interior plateau, Erie/Ontario lake plains, western Allegheny plateau, and eastern corn belt plains. For the Huron/Erie lake plains ecoregion, the comparable ScDFo are based upon the 90th percentile of all sites within the ecoregion. Attributes are measured using index of biotic integrity, modified index of well-being and invertebrate community index as defined in Users Manual. Upground storage reservoirs are also WWH. Attainment of use (except for upground storage reservoirs) is based on criteria in table 7-14.
OH	Wetland	These are areas of land where the water table is at, near or above the land surface long enough each year to result in the formation of characteristically wet (hydric) soil types, and support the growth of water-dependent (hydrophytic) vegetation. Wetlands include, but are not limited to, marshes, swamps, bogs, and other such low-lying areas.